## CLAIMS

We claim:

1. An isolated protein, wherein the isolated protein is SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, or SEQ ID NO:8, a fragment thereof, or a conservative substitution thereof.

2. The isolated protein or fragment thereof of Claim 1, further comprising a deletion thereof, an addition thereto, or a substitution thereto of less than 20% of the amino acid sequence.

3. The isolated protein or fragment thereof of Claim 1, further comprising a deletion thereof, an addition thereto, or a substitution thereto of less than 10% of the amino acid sequence.

4. The isolated protein of Claim 1, wherein the isolated protein is capable of regulating superoxide production.

5. The isolated protein of Claim 4, wherein the superoxide production is regulated by an effect of the isolated protein on a Nox enzyme.

6. An isolated protein, wherein the isolated protein is SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, or SEQ ID NO:8, a deletion thereof or an addition thereto of no more than about 20% of the amino acid sequence, or a conservative substitution thereof, wherein the conservative substitution comprises substitution of:

a) alanine, serine, or threonine for each other;

b) aspartic acid or glutamic acid for each other;

c) asparagine or glutamine for each other;

d) arginine or lysine for each other;

e) isoleucine, leucine, methionine, or valine for each other; and,

f) phenylalanine, tyrosine, or tryptophan for each other.

7. An isolated nucleotide sequence encoding for the protein, the fragment thereof or the conservative substitution thereof as recited in Claim 1.

8. The nucleotide sequence of Claim 7, wherein the nucleotide sequence is SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, or SEQ ID NO:7, a fragment thereof, or a conservative substitution thereof.

9. A vector, wherein the vector comprises a nucleotide sequence encoding for the isolated protein, the fragment thereof, or the conservative substitution thereof, as recited in Claim 1.

10. The vector of Claim 9, wherein the nucleotide sequence is SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, or SEQ ID NO:7, a fragment thereof, or a conservative substitution thereof.

11. A cell comprising the vector of Claim 9.

12. A cell comprising the vector of Claim 10.

13. An antibody, wherein the antibody is capable of binding to the isolated protein, as recited in Claim 1, the fragment thereof, or the conservative substitution thereof.

14. A method of regulating superoxide formation comprising administration, *in vivo* or *in vitro*, of a composition comprising the isolated protein, the fragment thereof, or the conservative substitution thereof of Claim 1 and a pharmaceutically acceptable carrier.

15. The method of Claim 14, wherein the superoxide formation is regulated by modulation of a Nox enzyme by the isolated protein of Claim 1.

16. A method of regulating superoxide formation comprising administration, *in vitro* or *in vivo,* of a composition comprising the vector of Claim 9 and a pharmaceutically acceptable carrier.

17. The method of Claim 16, wherein the superoxide formation is regulated by modulation of a Nox enzyme by the isolated protein of Claim 1.

18. A method of regulating superoxide formation comprising administration, *in vitro* or *in vivo,* of a composition comprising the vector of Claim 10 and a pharmaceutically acceptable carrier.

19. A method of determining an effect of a compound on superoxide production comprising:

measuring a first level of superoxide production following administration of the isolated protein, the fragment thereof, or the conservative substitution thereof, as recited in Claim 1;

administering the compound to an animal, a human or a cell;

measuring a second level of superoxide production; and,

comparing the first level and the second level of superoxide production.

20. The method of Claim 19, wherein the isolated protein modulates superoxide production by a Nox enzyme.

21. A composition comprising the isolated protein, the fragment thereof, or the conservative substitution thereof of Claim 1 and a pharmaceutically acceptable carrier.

22. A method of regulating cell proliferation comprising administration, *in vivo* or *in vitro*, of a composition comprising the isolated protein, the fragment thereof, or the conservative substitution thereof of Claim 1 and a pharmaceutically acceptable carrier.

23. A method of regulating cell proliferation comprising administration, *in vivo* or *in vitro*, of a composition comprising the nucleotide sequence, the fragment thereof, or the conservative substitution thereof of Claim 7 and a pharmaceutically acceptable carrier.